

DETAILED OFFICE ACTION

1. Claims 1-32 are pending in Application 10/558,431.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2619

4. Claims 1, 2, 4-6, 9, 11-13, 16-22, 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (AAPA) in view of Lee et al. (A New Control Protocol For Home Appliances – LnCP -2001) in view of An (2003/0085795).

Regarding claim 1, AAPA discloses a home network system, comprising an electric device having at least two heterogeneous function means and a network manager for controlling and/or monitoring the electric device through the network (**see paragraph 0005, lines 1-13 [the home network system comprises a network manager to monitor and control devices and an electric device that has a first function of responding to commands or requests of the network manger and a second function of notifying a status change according to the characteristics of the electric device]**). AAPA does not disclose that the electric device includes a packet processing device having one node address, receiving the packet having the node address from the network manager and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command. Lee et al. discloses that the electric device includes a packet processing device having one node address (**see abstract, lines 16-22 and see p. 228 Figure 4, Device Address Field [each device has a microcontroller that processes packets corresponding to the device address]**), receiving the packet having the node address from the network manager (**see p. 287, lines 29-32 [the master device sends the slave device a message to begin conversation in response to a user generated event or algorithm]**) and enabling the

Art Unit: 2619

heterogeneous function means corresponding to a command included in the packet to execute the command **(see p. 290, lines 36-36 and Figure 7A [the request message contains the command and the arguments to execute the command])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lee et al. into system of AAPA. The method of Lee et al. can be implemented by enabling the network manager to send a request message containing a command code and arguments to execute the command to a slave device (the refrigerator).

The references as applied above do not disclose generating a packet having a node address and transmitting the packet to the network manager. An discloses such features **(see paragraph 0028, lines 1-7 and paragraph 0029, 1-12 [the user uses terminal 40 to transmit instructions to a particular appliance, the instructions are forwarded via Network 30 to Gateway Processor 20 and from there forwarded to the particular device based on the identification code])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of An into the system of the references as applied above. The method of An can be implemented by enabling the Network Manager (Lee et al. Document) to receive messages via a second network and forward the message to the appropriate device based on the identification code in the message. The motivation for this is to enable the user to remotely control or monitor home devices.

Regarding claim 2, Lee et al. discloses that the electric device comprises one physical communication interface with the network (see p. 287, Figure 1 [the refrigerator is connected to the home network via the Network Bus which is a Power Line]).

Regarding claim 4, Lee et al. discloses that the packet processing device enables the heterogeneous function means corresponding to the command to execute the command according to the characteristics (see p. 287, lines 33-40 and p. 290, Figure 7A [the commands to control the devices are inserted into the command field of the packet, the commands can vary from controlling the device (turn off/on the device) to monitoring the device (check the status of the sensors of the appliance) and each control has a specific arguments (instructions to perform the command)]).

Regarding claim 5, Lee et al. discloses that the protocol is a living network protocol (see abstract, lines 1-4 and 8-9 [the protocol linking the appliances is living network protocol]).

Regarding claim 6, Lee et al. discloses that the packet processing device is a slave device (see p. 287, Figure 1, the Refrigerator and p. 287, lines 28-35 [the refrigerator is a slave device because it cannot initiate a dialog between itself and another device]).

Regarding claim 9, AAPA an electric device having at least two heterogeneous function means and a network manager for controlling and/or monitoring the electric device through the network (see paragraph 0005, lines 1-13 [the home network system comprises a network manager to monitor

and control devices and an electric device that has a first function of responding to commands or requests of the network manger and a second function of notifying a status change according to the characteristics of the electric device]]. AAPA does not disclose that the electric device includes a packet processing device having one node address, receiving the packet having the node address from the network manager and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command. Lee et al. discloses that the electric device includes a packet processing device having one node address **(see abstract, lines 16-22 and see p. 228 Figure 4, Device Address Field [each device has a microcontroller that processes packets corresponding to the device address])**, receiving the packet having the node address from the network manager **(see p. 287, lines 29-32 [the master device sends the slave device a message to begin conversation in response to a user generated event or algorithm])** and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command **(see p. 290, lines 36-36 and Figure 7A [the request message contains the command and the arguments to execute the command])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lee et al. into system of AAPA. The method of Lee et al. can be implemented by enabling the network manager to send a request message containing a command code and arguments to execute the command to a slave device (the refrigerator).

The references as applied above do not disclose generating a packet having a node address and transmitting the packet to the network manager. An discloses such features (see paragraph 0028, lines 1-7 and paragraph 0029, 1-12 [the user uses terminal 40 to transmit instructions to a particular appliance, the instructions are forwarded via Network 30 to Gateway Processor 20 and from there forwarded to the particular device based on the identification code]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of An into the system of the references as applied above. The method of An can be implemented by enabling the Network Manager (Lee et al. Document) to receive messages via a second network and forward the message to the appropriate device based on the identification code in the message. The motivation for this is to enable the user to remotely control or monitor home devices.

Regarding claim 11, Lee et al. discloses that the packet processing device enables the heterogeneous function means corresponding to the command to execute the command according to the characteristics (see p. 287, lines 33-40 and p. 290, Figure 7A [the commands to control the devices are inserted into the command field of the packet, the commands can vary from controlling the device (turn off/on the device) to monitoring the device (check the status of the sensors of the appliance) and each control has a specific arguments (instructions to perform the command)]).

Regarding claim 12, Lee et al. discloses that the protocol is a living network protocol **(see abstract, lines 1-4 and 8-9 [the protocol linking the appliances is living network protocol])**.

Regarding claim 13, Lee et al. discloses that the packet processing device is a slave device **(see p. 287, Figure 1, the Refrigerator and p. 287, lines 28-35 [the refrigerator is a slave device because it cannot initiate a dialog between itself and another device])**.

Regarding claim 16, AAPA discloses a home network system, comprising an electric device having at least two heterogeneous function means and a network manager for controlling and/or monitoring the electric device through the network **(see paragraph 0005, lines 1-13 [the home network system comprises a network manager to monitor and control devices and an electric device that has a first function of responding to commands or requests of the network manger and a second function of notifying a status change according to the characteristics of the electric device])**. AAPA does not disclose that the electric device includes a packet processing device having one node address, receiving the packet having the node address from the network manager and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command. Lee et al. discloses that the electric device includes a packet processing device having one node address **(see abstract, lines 16-22 and see p. 228 Figure 4, Device Address Field [each device has a microcontroller that processes packets corresponding to the device address])**, receiving the packet having

the node address from the network manager (**see p. 287, lines 29-32 [the master device sends the slave device a message to begin conversation in response to a user generated event or algorithm]**) and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command (**see p. 290, lines 36-36 and Figure 7A [the request message contains the command and the arguments to execute the command]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lee et al. into system of AAPA. The method of Lee et al. can be implemented by enabling the network manager to send a request message containing a command code and arguments to execute the command to a slave device (the refrigerator).

The references as applied above do not disclose generating a packet having a node address and transmitting the packet to the network manager. An discloses such features (**see paragraph 0028, lines 1-7 and paragraph 0029, 1-12 [the user uses terminal 40 to transmit instructions to a particular appliance, the instructions are forwarded via Network 30 to Gateway Processor 20 and from there forwarded to the particular device based on the identification code]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of An into the system of the references as applied above. The method of An can be implemented by enabling the Network Manager (Lee et al. Document) to receive messages via a

second network and forward the message to the appropriate device based on the identification code in the message. The motivation for this is to enable the user to remotely control or monitor home devices.

Regarding claim 17, Lee further discloses that the number of the packets processing devices corresponds to the number of heterogeneous function means **(see p. 287, column 1, lines 33-40 and Figure 1 [if each device on the network has two functions, then the number of functions directly corresponds to the number of devices])**.

Regarding claim 18, Lee et al. discloses that the electric device comprises one physical communication interface with the network **(see p. 287, Figure 1 [the refrigerator is connected to the home network via the Network Bus which is a Power Line])**.

Regarding claim 19, Lee et al. further discloses that the device comprises a device arbitrator for enabling the packet processing devices to share the physical communication interface **(see p.287 column 2, lines 29-37 [only slave devices that receive a request message from the master device can respond on the network bus otherwise the slave devices continuously listen on the network bus for messages from the master device])**.

Regarding claim 20, Lee et al. discloses that the device arbitrator confirms the status of the packet processing device by receiving packet when he packet processing device transmits a predetermined packet **(see p. 289, column 1, lines 31-37 and column 2, line 1 and Figure 7B [the master device get the**

status of the slave devices by sending a request message and the slave responds with a ACK or NAK followed by return arguments]).

Regarding claim 21, Lee et al. discloses that the protocol is a living network protocol **(see abstract, lines 1-4 and 8-9 [the protocol linking the appliances is living network protocol])**.

Regarding claim 22, Lee et al. discloses that the packet processing device is a slave device **(see p. 287, Figure 1, the Refrigerator and p. 287, lines 28-35 [the refrigerator is a slave device because it cannot initiate a dialog between itself and another device])**.

Regarding claim 25, AAPA an electric device having at least two heterogeneous function means and a network manager for controlling and/or monitoring the electric device through the network **(see paragraph 0005, lines 1-13 [the home network system comprises a network manager to monitor and control devices and an electric device that has a first function of responding to commands or requests of the network manger and a second function of notifying a status change according to the characteristics of the electric device])**. AAPA does not disclose that the electric device includes a packet processing device having one node address, receiving the packet having the node address from the network manager and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command. Lee et al. discloses that the electric device includes a packet processing device having one node address **(see abstract, lines 16-22 and see p. 228 Figure 4, Device Address Field [each device has a microcontroller**

that processes packets corresponding to the device address)), receiving the packet having the node address from the network manager (see p. 287, lines 29-32 [the master device sends the slave device a message to begin conversation in response to a user generated event or algorithm]) and enabling the heterogeneous function means corresponding to a command included in the packet to execute the command (see p. 290, lines 36-36 and Figure 7A [the request message contains the command and the arguments to execute the command])).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lee et al. into system of AAPA. The method of Lee et al. can be implemented by enabling the network manager to send a request message containing a command code and arguments to execute the command to a slave device (the refrigerator).

The references as applied above do not disclose generating a packet having a node address and transmitting the packet to the network manager. An discloses such features (see paragraph 0028, lines 1-7 and paragraph 0029, 1-12 [the user uses terminal 40 to transmit instructions to a particular appliance, the instructions are forwarded via Network 30 to Gateway Processor 20 and from there forwarded to the particular device based on the identification code])).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of An into the system of the references as applied above. The method of An can be implemented by

enabling the Network Manager (Lee et al. Document) to receive messages via a second network and forward the message to the appropriate device based on the identification code in the message. The motivation for this is to enable the user to remotely control or monitor home devices.

Regarding claim 26, Lee further discloses that the number of the packets processing devices corresponds to the number of heterogeneous function means **(see p. 287, column 1, lines 33-40 and Figure 1 [if each device on the network has two functions, then the number of functions directly corresponds to the number of devices])**.

Regarding claim 27, Lee et al. further discloses that the device comprises a device arbitrator for enabling the packet processing devices to share the physical communication interface **(see p.287 column 2, lines 29-37 [only slave devices that receive a request message from the master device can respond on the network bus otherwise the slave devices continuously listen on the network bus for messages from the master device])**.

Regarding claim 28, Lee et al. discloses that the device arbitrator confirms the status of the packet processing device by receiving packet when the packet processing device transmits a predetermined packet **(see p. 289, column 1, lines 31-37 and column 2, line 1 and Figure 7B [the master device get the status of the slave devices by sending a request message and the slave responds with a ACK or NAK followed by return arguments])**.

Regarding claim 29, Lee et al. discloses that the protocol is a living network protocol **(see abstract, lines 1-4 and 8-9 [the protocol linking the appliances is living network protocol])**.

Regarding claim 30, Lee et al. discloses that the packet processing device is a slave device **(see p. 287, Figure 1, the Refrigerator and p. 287, lines 28-35 [the refrigerator is a slave device because it cannot initiate a dialog between itself and another device])**.

5. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (AAPA) in view of Lee et al. (A New Control Protocol For Home Appliances – LnCP -2001) in view of An (2003/0085795) as applied to claims 1 and 9 above, and further in view of Kizu et al. (US 6,732,144).

Regarding claim 3, the references as applied above disclose all the claimed subject matter recited in claim 1, but do not disclose that the commands are divided according to the heterogeneous function means, and the packet processing device transmits the command to the corresponding heterogeneous function means so that the heterogeneous function means can execute the command. However, Kizu et al. discloses such a feature **(see column 7, lines 11-18 [the arbitrary device can be specified as a master or slave depending on the data sets received])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kizu et al. into the system of the references as applied above. The method Kizu can be

implemented by enabling the Network Manager to act as master and slave depending on the information transmitted. The motivation for this is enable the Network Manager to act as a slave when receiving information from a remote user and to act as a master when controlling and monitoring devices in the home network.

Regarding claim 10, the references as applied above disclose all the claimed subject matter recited in claim 9, but do not disclose that the commands are divided according to the heterogeneous function means, and the packet processing device transmits the command to the corresponding heterogeneous function means so that the heterogeneous function means can execute the command. However, Kizu et al. discloses such a feature **(see column 7, lines 11-18 [the arbitrary device can be specified as a master or slave depending on the data sets received])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kizu et al. into the system of the references as applied above. The method Kizu can be implemented by enabling the Network Manager to act as master and slave depending on the information transmitted. The motivation for this is enable the Network Manager to act as a slave when receiving information from a remote user and to act as a master when controlling and monitoring devices in the home network.

6. Claims 7, 14, 23, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (AAPA) in view of Lee et al. (A New Control

Protocol For Home Appliances – LnCP -2001) in view of An (2003/0085795) as applied to claims 1, 9, 16, and 25 above, and further in view of Lam et al. (US 6,272,677).

Regarding claim 7, the references as applied above disclose all the claimed subject matter recited in claim 1, but do not disclose that the packet processing device comprises a master device and a slave device. However, Lam et al. discloses such a feature (**see Figure 1B, device 12 [the agent contains a master device and a slave device]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lam et al. into the system of the references as applied above. The method of Lam et al. can be implemented by putting a master device and a slave device in the Network Manager. The motivation for this is to enable the Network Manager to receive instructions with the slave portion via network 30 (An '795) and forward the instructions to the appliances with the master portion.

Regarding claim 14, the references as applied above disclose all the claimed subject matter recited in claim 9, but do not disclose that the packet processing device comprises a master device and a slave device. However, Lam et al. discloses such a feature (**see Figure 1B, device 12 [the agent contains a master device and a slave device]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lam et al. into the system of the references as applied above. The method of Lam et al. can be

implemented by putting a master device and a slave device in the Network Manager. The motivation for this is to enable the Network Manager to receive instructions with the slave portion via network 30 (An '795) and forward the instructions to the appliances with the master portion.

Regarding claim 23, the references as applied above disclose all the claimed subject matter recited in claim 16, but do not disclose that the packet processing device comprises a master device and a slave device. However, Lam et al. discloses such a feature **(see Figure 1B, device 12 [the agent contains a master device and a slave device])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lam et al. into the system of the references as applied above. The method of Lam et al. can be implemented by putting a master device and a slave device in the Network Manager. The motivation for this is to enable the Network Manager to receive instructions with the slave portion via network 30 (An '795) and forward the instructions to the appliances with the master portion.

Regarding claim 31, the references as applied above disclose all the claimed subject matter recited in claim 25, but do not disclose that the packet processing device comprises a master device and a slave device. However, Lam et al. discloses such a feature **(see Figure 1B, device 12 [the agent contains a master device and a slave device])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Lam et al. into the

system of the references as applied above. The method of Lam et al. can be implemented by putting a master device and a slave device in the Network Manager. The motivation for this is to enable the Network Manager to receive instructions with the slave portion via network 30 (An '795) and forward the instructions to the appliances with the master portion.

7. Claims 8, 15, 24, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (AAPA) in view of Lee et al. (A New Control Protocol For Home Appliances – LnCP -2001) in view of An (2003/0085795) as applied to claims 1, 9, 16, and 25 above, and further in view of Kim et al. (Home Networking Digital TV Based On LnCP – (11/2002)).

Regarding claim 8, the references as applied above disclose all the claimed subject matter recited in claim 1, but do not disclose the packet processing device comprises a master device, a slave device and, a network management device. However, Kim et al. discloses such a feature (**see p. 994, column 1 lines 3-5 [the Home Network TV takes on the role of a master and the role of network manager, and is still a slave device (television) when the HNTV function is not is use]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kim et al. into the system of the references as applied above. The method of Kim et al. can be implemented by enabling the refrigerator to act as a manager and master as well

as a slave. The motivation for this is to enable the user to control every connected device from any slave device terminal.

Regarding claim 15, the references as applied above disclose all the claimed subject matter recited in claim 9, but do not disclose the packet processing device comprises a master device, a slave device and, a network management device. However, Kim et al. discloses such a feature (**see p. 994, column 1 lines 3-5 [the Home Network TV takes on the role of a master and the role of network manager, and is still a slave device (television) when the HNTV function is not is use]]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kim et al. into the system of the references as applied above. The method of Kim et al. can be implemented by enabling the refrigerator to act as a manager and master as well as a slave. The motivation for this is to enable the user to control every connected device from any slave device terminal.

Regarding claim 24, the references as applied above disclose all the claimed subject matter recited in claim 16, but do not disclose the packet processing device comprises a master device, a slave device and, a network management device. However, Kim et al. discloses such a feature (**see p. 994, column 1 lines 3-5 [the Home Network TV takes on the role of a master and the role of network manager, and is still a slave device (television) when the HNTV function is not is use]]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kim et al. into the system of the references as applied above. The method of Kim et al. can be implemented by enabling the refrigerator to act as a manager and master as well as a slave. The motivation for this is to enable the user to control every connected device from any slave device terminal.

Regarding claim 32, the references as applied above disclose all the claimed subject matter recited in claim 25, but do not disclose the packet processing device comprises a master device, a slave device and, a network management device. However, Kim et al. discloses such a feature (**see p. 994, column 1 lines 3-5 [the Home Network TV takes on the role of a master and the role of network manager, and is still a slave device (television) when the HNTV function is not is use]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kim et al. into the system of the references as applied above. The method of Kim et al. can be implemented by enabling the refrigerator to act as a manager and master as well as a slave. The motivation for this is to enable the user to control every connected device from any slave device terminal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER T. WYLLIE whose telephone

Art Unit: 2619

number is (571) 270-3937. The examiner can normally be reached on Monday through Friday 8:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher T. Wyllie/
Examiner, Art Unit 2619

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619